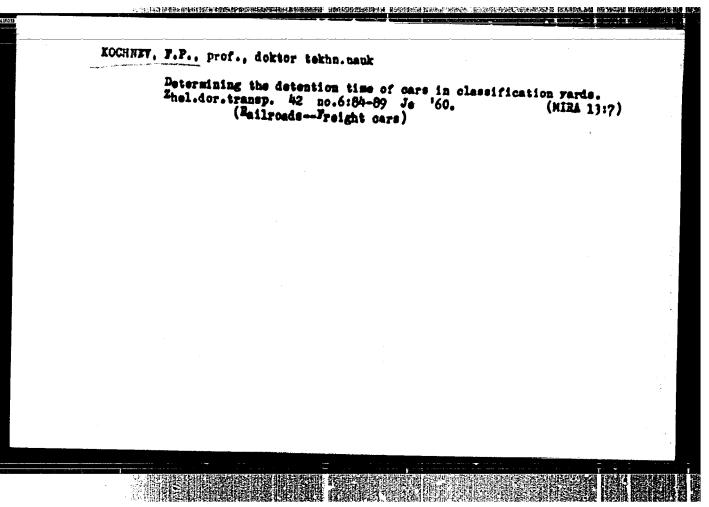


New trends in scientific, research, and educational institutes, structural design bureaus and laboratories. Blak.i tepl.tiage 4 no.2:28 F '60. (MIMA 13:6)

1. Machal'nik Moskovskogo instituta inshenerov shelesnodoroshnogo transporta.

(Electric engineering—Study and teaching)

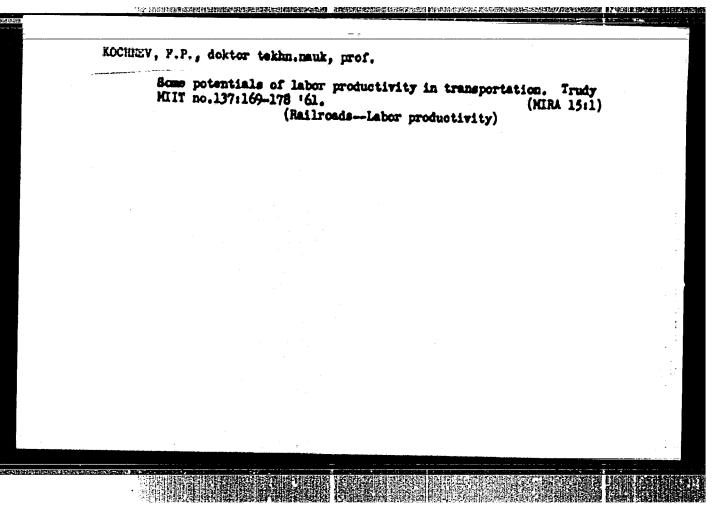


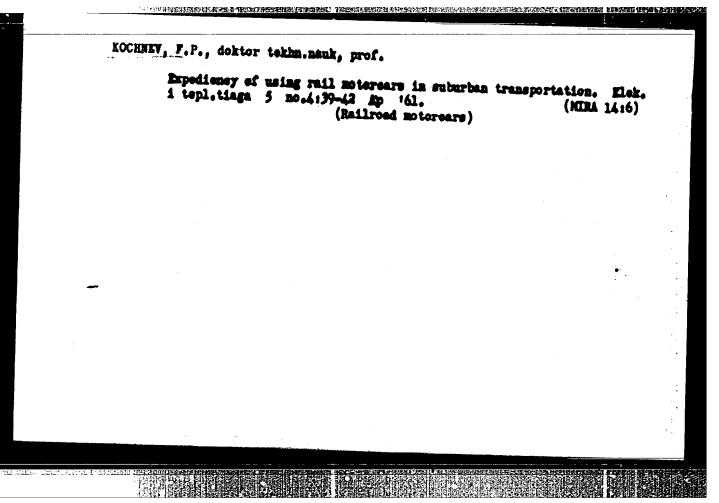
KOCHMEV, Fedor Petrovich, dektor tekhn.nauk, prof.; MAKSDMOVICH, Boris Mikhaylovich, kand.tekhn.nauk, dotsent; SOTMIKOV, Isaak Bentsionovich, kand.tekhn.nauk, dotsent; SDMOOV, K.S., kand.tekhn.nauk, retsensent; MAMIUKOV, G.S., insh., red.; BOHROVA, Ye.W., tekhn.red.

[Problems concerning the organisation of train movement] Voprosy organisatsii dvisheniia poesdov. Moskva, Vses.isdatel'sko-poligr. ob*edinenie M-va putei scobshcheniia, 1961. 211 p.

(MIRA 14:6)

(Railroads-Traffic) (Railroads-Signaling)



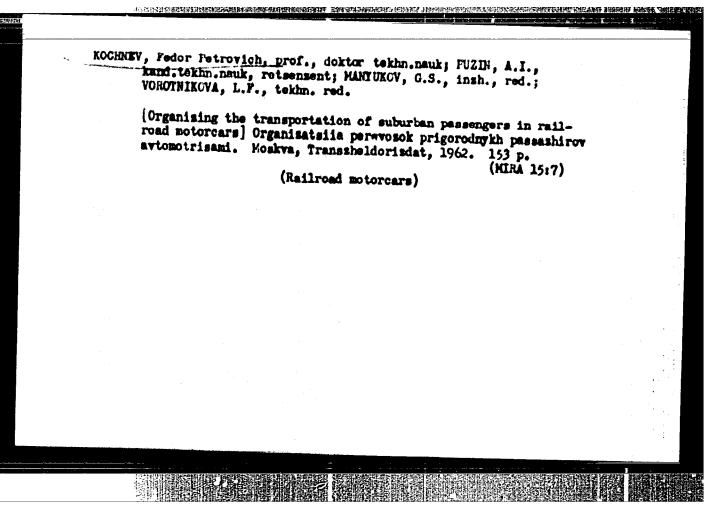


。 14年以底,对各国的市场社会企业的社会。14年的企业是共享的企业,企业人员,发展,实现的企业的企业。(14年的基础的基础的基础的工程和企业和建设的企业和建设的企业和

KOCHNEY, F.P., prof., doktor tekhn.nauk

Effectiveness of diesel trains and rail motorcers in suburban and local communications. Zhel.dor.transp. 43 no.2:37-40 F '61. (Railroads—Commuting traffic) (Electric railroads)

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520010-1"



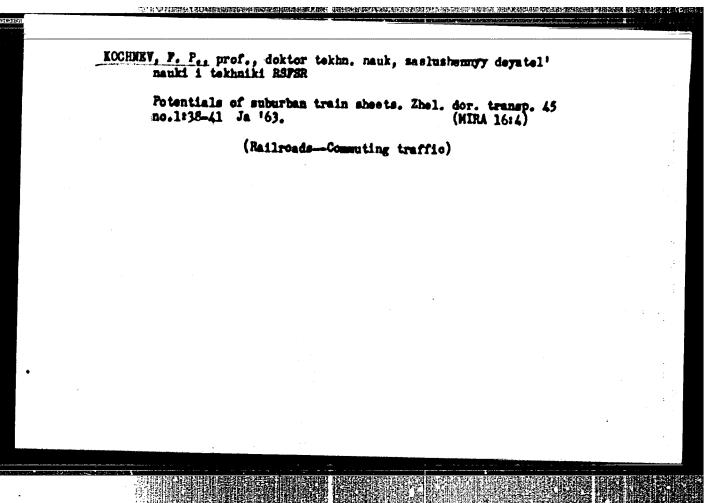
EOCHNEY, P.P., prof., doktor tekhn. nauk, saslushennyy deyatel'
nauki'i tekhniki

Lecometives and relling steck used in commuter service should
be better utilised. Elek. i tepl. tiaga 7 ne.3:22-24 Mr '63,

(MIRA 16:6)

(Railreads—Electrification)

(Railreads—Passenger traffic)



KCCHEV, F.R., prof., doktor tekim.nauk, zasluziennyy deyatol' nauki i tekhniki RSFR

Efficient methods for increasing the speed of passonger trains in local communications. Zhel.dor.transp. 45 no.9142-45 S '63.

(Railrosds--Train speed)

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520010-1"

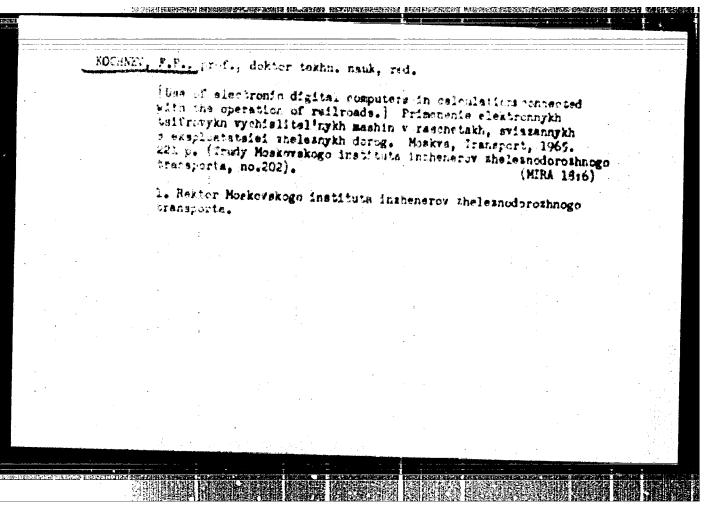
KOCHNEY, F.P., doktor tekhn. nauk, prof.

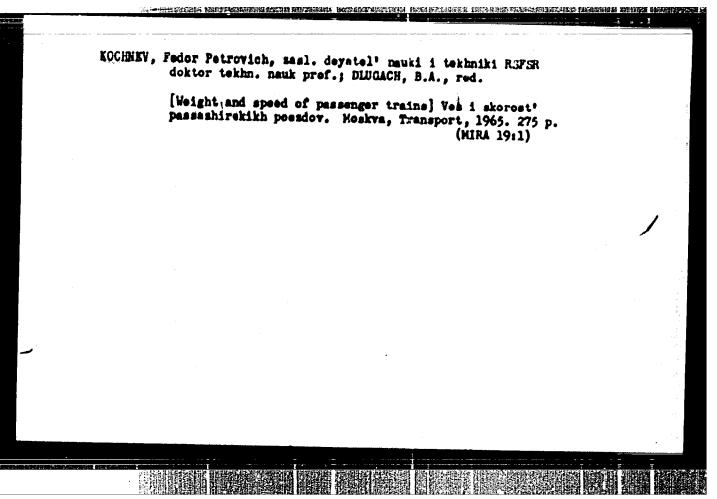
Problems of the reduction of the costs of construction of new railroads. Trudy MIIT no.162:3 '63. (MIRA 17:4)

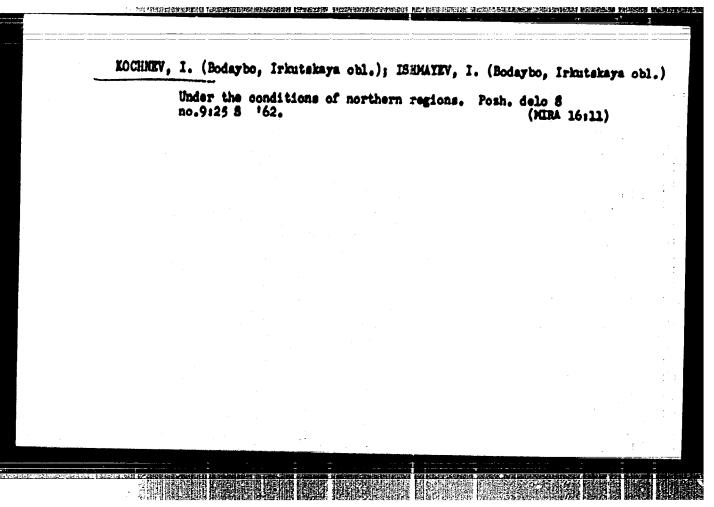
1. Rektor Moskovskogo instituta inshenerov shelesmodoroshnogo transporta.

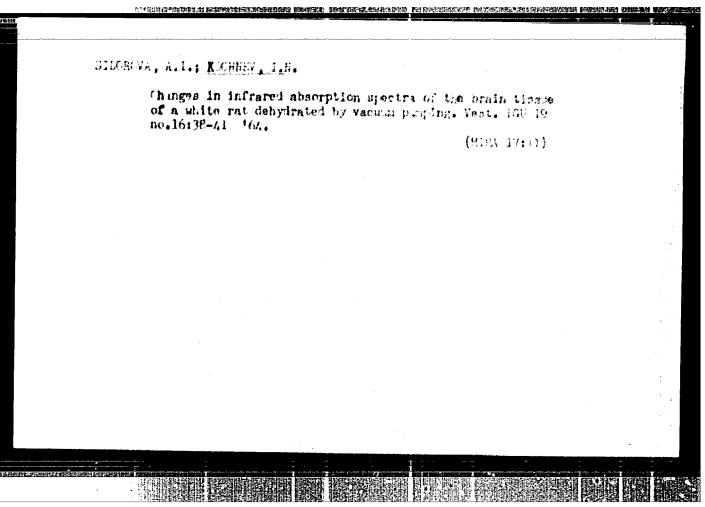
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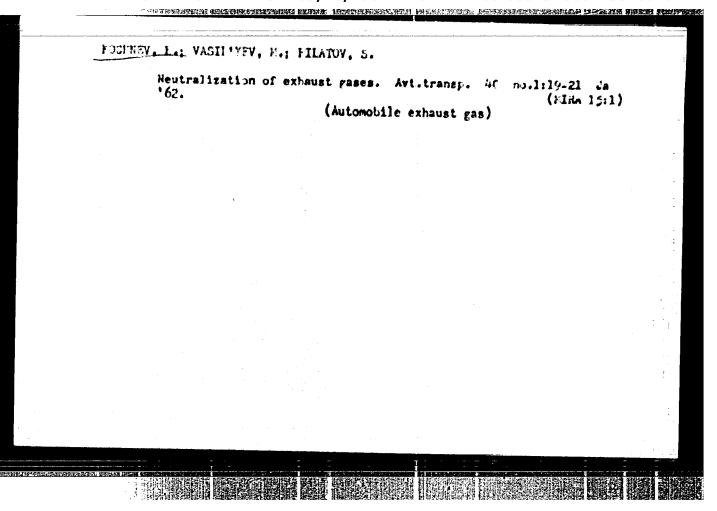
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CIA-RDP86-00513R000723520010-1

MAIN Conditioning in Minima of Cro Do online Die cond to San increase Sectionalies."

Sub 73 Mar 52, Test of Minima, Acad Soi State.

Dissertations presented for science and conductation decrees in Maccon Curine 12(1, 50); Cur. No. 160, 9 May 52.

KOCHNEV, K. V.

KOCHNEY, K. V. -- "Control of Firedamp in Mining Deposits Susceptible to Self-Ignition." Sub 27 Jun 52, Inst of Mining, Acad Sci USSR (Dissertation for the Degree of Doctor in Technical Sciences)

SO: Vechernaya Moskva, January-December 1952

。(4.154)是1955年的任理和智能的自然的建筑的建筑的建筑的建筑的,1955年的1955年的1955年的1955年的1955年的1955年的1955年的1955年的1955年的1955年的1955年的1955年的19

KOGHNEV, K. V.

USSR/Mining - Underground Fires, Mine Safety

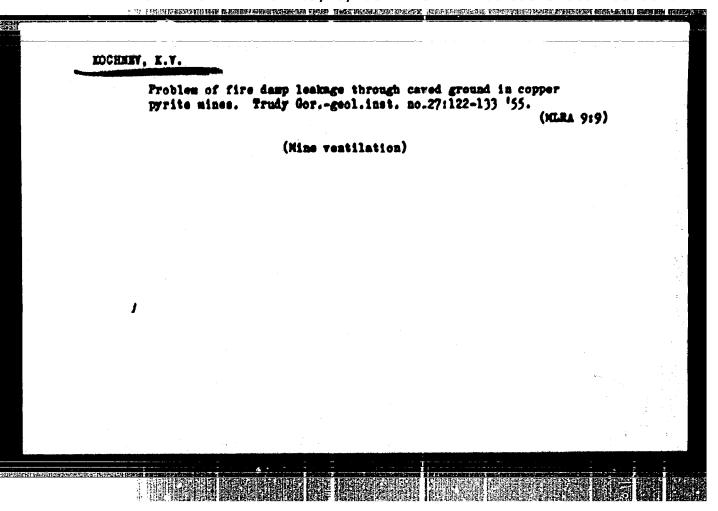
Jul 52

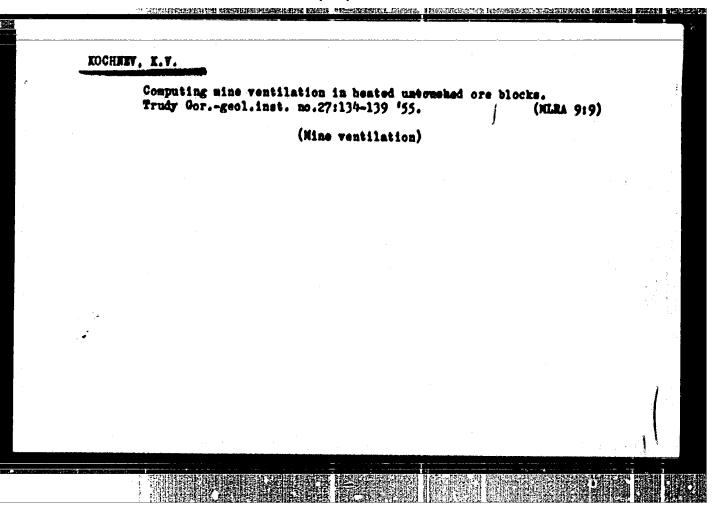
"Prevention of Endogenous Fires in Copper -Pyrite Hines," A. A. Ivanov, K. M. Charkviani, H. P. Diyev, K. V. Kochnev, Z. G. Sheins, Ye. F. Iordan, F. E. Pavlov

"Iz Ak Nauk, Otdel Tekh Nauk" No 7, pp 1037-1044

Presents results of works conducted since 1947 by a (roup of Eoviet investigators studying causes of underground fires and establishing preventive measures. Discusses selection of mining system safe in respect to fires, silting as basic preventive measures against underground fires, and ventilation for cooling ore rocks and for maintaining normal temp conditions in mines. Submitted by Acad A. A. Skochinskiy 1 Apr 52.

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TO ANTHONIO CONTROL OF THE CONTROL O

KOCHNEY, K.V., doktor tekhnicheskikh nauk.

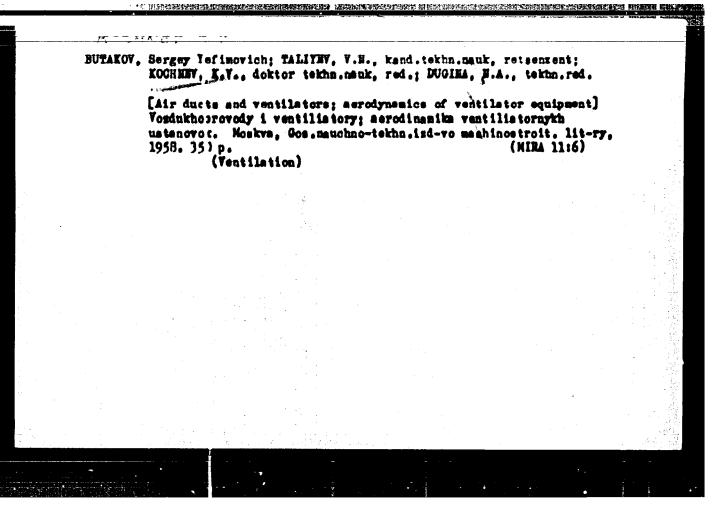
Main trends in technical engineering studies on silicosis prevention in enterprises in the Urals. Sbor. rab. po sil. no.1:3-11 '56. (MCRA 10:2)

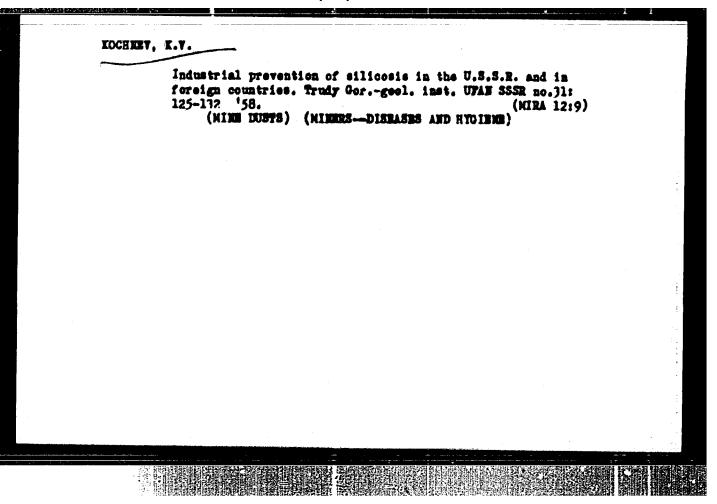
1. Gorno-Geologicheskiy institut Ural'skogo filiala Akademii nauk SSSR.
(LUMGS--DUST DISEASMS) (URALS---MINS SAMITATION)

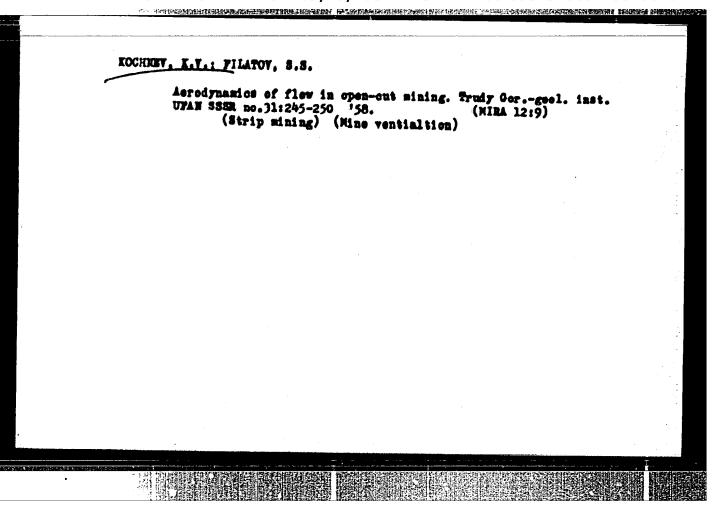
KOCHNEY, K.Y., koktor tekhnicheskikh nauk.

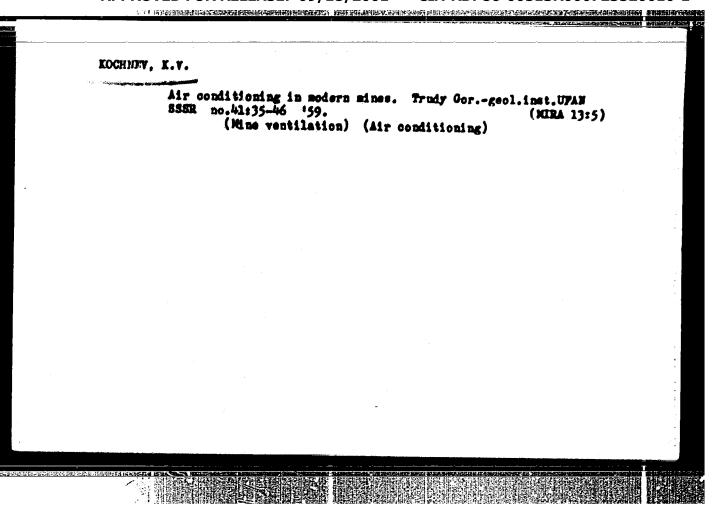
Technical means of preventing silicosis in Urals' mines. Gor. shur. no.2:63-64 F '56. (KERA 9:5)

1. Corno-geologicheskiy institut Ural'ekogo filiala AN SSSR. (Ural Mountain region--Minners' phthieis) (Ural Mountain region--Mine sanitation)









ECCHNEY, Konstantin Vasil'yevich; BUTAKOV, S.Te., otv.red.; MAKOYSKIT,

G.M., red.isd-va; ASTAP'YEVA, O.A., tekbn.red.

[Temperature control in mises] Teplovoe konditationirovanie rudnichnogo vosdukha. Moskva, Isd-vo ikud.nauk 3532, 1960.

133 p. (Akademiia nauk 3532. Upul'akti filial, Sverdlovak,
Gorno-geologicheski institut. Trudy, no.4h) (MIRA 13:9)

(Mine ventilation)

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520010-1"

KOCHNEV, K.V., prof., doktor tekhn.nauk; FILATOV, S.S., mladshiy nauchnyy sotrudnik .

Improvement of atmospheric conditions in deep quarries. Shor. rab. po silik. no.2:3-14 '60. (HIRA' 14:3)

1. Gorno-geologicheskiy institut Ural'ekogo filiala AM SSSR. (MINE VENTILATION) (MINE DUSTS)

KOCHNEV, K.V., prof.doktor tekhn.nauk; YEFREMOVA, T.K., gornyy inshener

Controlling dust pollution of the air in mechanised longwall mining in the Chelyabinsk Coal Basin. Shor. rab. po silik. no.2:125-129 '60. (AIRA 14:3)

1. Gorno-geologicheskiy institut Ural'skogo filiala AN SSSR. (CRELYABINSK BASIN-DEST-PREVENTION)

FILATOV, S.S.; KOCHNEY, K.V.; VASIL'IEV, M.V.

Searching for practical methods of controlling exhaust gases from truck haulage in strip mines. Gor.shur. no.5165-68 My '60.

(MIRA 14:3)

1. Ural'skiy filial AN SSSR, Sverdlovsk.

(Nine sanitation) (Automobile exhaust gas)

D'IAKOY, Vasiliy Vasil'yevich; KOCHENY, K.V., otv. red.; GRISHAYEKO, M.I., red. isd-ve; SHELIAR, S.Ye., tekhn, red.

[Dust control in scraper levels] Obespylivanie gorisontov akre-perovaniis. Moskva, Gos. nauchno-tekhn. isd-vo lit-ry po gornown delu, 1961. 90 p. (MIRA 14:5)

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520010-1"

KOCHNEY, K.Y., prof., doktor tekhn.neuk

Results of scientific studies on the technical prevention of sillieosis. Sbor. rab. po silik. no3:3-9 *61. (MIRA 15:10)

1. Gorno-geologieheskiy institut Ural'skogo filiala AN SSSR. (Mine duste) (Lunge-Dust diseases)

KOCHHEV. K.V., prof., doktor tekhn.nauk; REZNIKOV, N.A., gormyy insh.; FILATOV, S.S., gornyy insh.

Controlling dust formation in the Korkino open-pit mine.
Sbor. rab. po silik. no.3179-85 '61. (MIRA 15:10)

1. Gorno-geologicheskiy institut Ural'skogo filiala AM SSSR, trest Korkinugil'. (Chelyabinek Basin—Coal mines and mining) (Mine dusts)

KOCHNEV, K.V., prof., doktor tekhn.nauk; SHEINA, Z.G., kand.khimicheskikh nauk; FEDOROVA, G.G., kand.khimicheskikh nauk

Preventing dust formation and keeping down floating dust in the Korkino open-pit mine. Sbor. rab. po silik. no.3:109-117 '61. (MIRA 15:10)

1. Gorno-geologicheskiy institut Ural'skogo filiala AN SSSR. (Chelyabinsk basin--Mine dists)



KOCHNEY, K.V., prof., doktor tekhn.neuk; D'YAKOV, V.V., gornyy insh.; KOVALEY,

Effect of the speed and initial dust content of an air current on its picking up dust from the surface of mine workings. Shor. rab. po silik, no.3:119-128 161. (MIRA 15:10)

1. Gorno-geologicheskiy institut Ural'skogo filiala AN SSSR i Sverdlovskiy institut okhrany truda.

(Mine dusts)

· OP-LE RESERVATION CONTROL MANAGEMENT NO MANAGEMENT TO A STREET AND A STREET TO A STREET TO A STREET A STREET TO A STREET TO

KOCHNEV, K.V., prof., doktor tekhn.nauk; SHEIHA, Z.G., kand.khim.nauk; FEDOROVA, G.G., kand.khim.nauk

Wetting agents and saline additives as means of controlling the process of dust prevention. Bor'ba s sil. 5:21-27 '62.

(MIRA 16:5)

1. Gorno-geologicheskiy institut Ural'skogo filiala AN SSER. (Mine dusta-Prevention)

KOTHIEV, K.Z., prof. d ktor tekhn. ranks His Lills, W.L., ktol. wikin. nauks
(1600, W.L., kant. tekhn. nauk
Testing of electric mine filters. derlu x sil. naid.-i67 (Mika 1812)

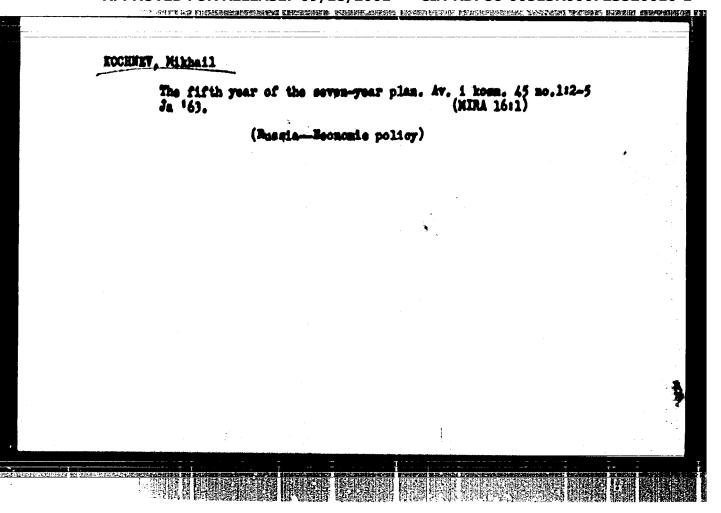
KOCHIEV, E.

33206. KCCIETEV, N. Trud i presnya.-dva pokolemiya (ocherki ob ivan. tektil'schikakh ivanevskiy al'ranakh, km. 11, 1949, c. 1953

SO: Letopis' Zhurnal'nykh Statey, Vol. 45, Mosiwa 1949

KCCHNEV, M .27K7

Zinaida Men'shikova. Hoskva, Hoskovskiy rabochiy, 1951
62 p. port.



A STATE OF THE PROPERTY OF THE

KOCHNEV, M.F.; GALYGIN, A.V.

Designing continuous pickling units. Metallung 10 no.1:31-32 Ja 165. (MIRA 18:4)

1. Nachal'nik listoprokatnogo tsebha Magnitogorskogo metallurgicheskogo kombinata (for Kochney). 2. Nachal'nik travil'nogo otdeleniya Magnitogorskogo metallurgicheskogo kombinata (for Galygin).

FULL VCV MF

137-58-6-12155

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Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 6, p 140 (USSR)

AUTHORS: Benyakovskiy, M.A., Shadrin, V.A., Kulikov, V.I., Uzivenko, A.M., Kustobayev, G.G., Kochnev, M.F.,

Kutuyev, Ya.S.

TITLE:

The Interrelation of the Pressure, the Pull, and the Thickness of a Strip Subjected to Cold Rolling (Vzaimosvyaz' davleniya, natyazheniya i tolshchiny lenty pri kholodnoy prokatke)

PERIODICAL Byul. nauchno-tekhn. inform. Ural'skiy n.-i. in-t chernykh metallov, 1957, Nr 3, pp 114-123

ABSTRACT: A three-stand rolling mill of the MMK was employed during research concerned with the effect of rolling (R) rate on the thickness of a strip (5), the establishment of interrelation of pressure and pull during cold R, and determination of the significance of longitudinal and transverse thickness variations in the S. A mathematical relationship is established between the basic parameters of the technological process of cold R of a S. It is established that variations in the tension of the strip midway between the stands of a mill have a decisive effect on the formation and magnitude of thickness variations in the S.

Card 1/2

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520010-1"

137-58-6-12155

The Interrelation of the Pressure, the Pull, and the Thickness of a Strip (cont.)

Fluctuations of R rate at the MMK have practically no effect on the thickness of the S. Variations in the pull produce thickness variations in the S equivalent to 0.01-0.02 mm on the average.

S.N.

1. Ungol--Processing 2. Over1--Pressure distribution 3. Rolling mills--Applications

Card 2/2

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520010-1"

THE RESIDENCE OF THE PROPERTY FORTHVEV, M.F. BENTAKOYSKIY, M.A.; KULIKOV, V.I.; SHADRIN, V.A.; KOLPAKOV, I.P.; KUTUTEV, Ya.S.; KUSTORAYRY, Q.G.; KOCHREV, M.F.; YESIPOV, I.V.; PETROV, B.I. Power consumption for the deformation of metal and conditions of strip rollings. Stal' 17 no.1:59-63 Ja '57. (MIRA 10:3) 1. Ural'skiy institut chernykh metallev i Magnitogorskiy metallurgicheskiy kombinat. (Relling (Metalwork)

> APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520010-1"

GUSEY, Vasiliy Pedorovich; EVITEO, M.E., insh., retsensent; ECCHEEY,

M.G., insh., retsensent; EASENTSYAN, A.A., insh., red.;

GUSEYA, L.P., tehin.red.

[Lasenbly and adjustment of verticel propeller pusps] Montash
i maladka vertikal nyth propellernyth macorov. Moskva, Gos.
nauchno-tekim.isd-vo mehinostroit.lit-ry, 1960. 197 p.

(MIRA 13:11)

(Pusping mehinery)

TATARIROV, M.P., prof.; KOCHEY, M.G., insh.; CHESECKOV, A.V., insh.

New centrifugal mine pump. Nameh. trudy MOI no.23;209-216
158. (Mine pumpe)

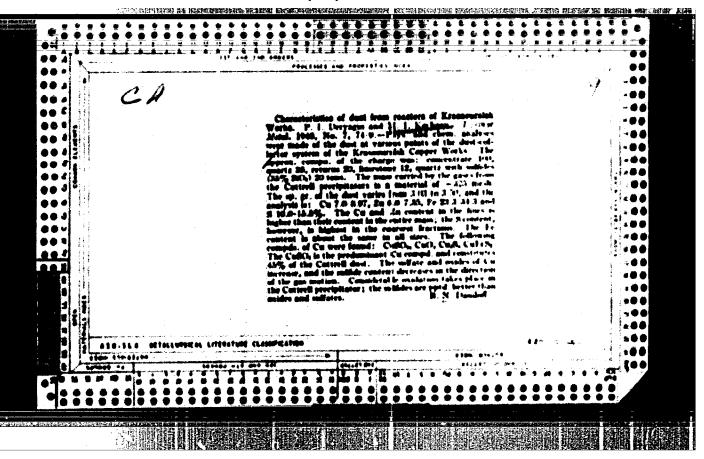
(Mine pumpe)

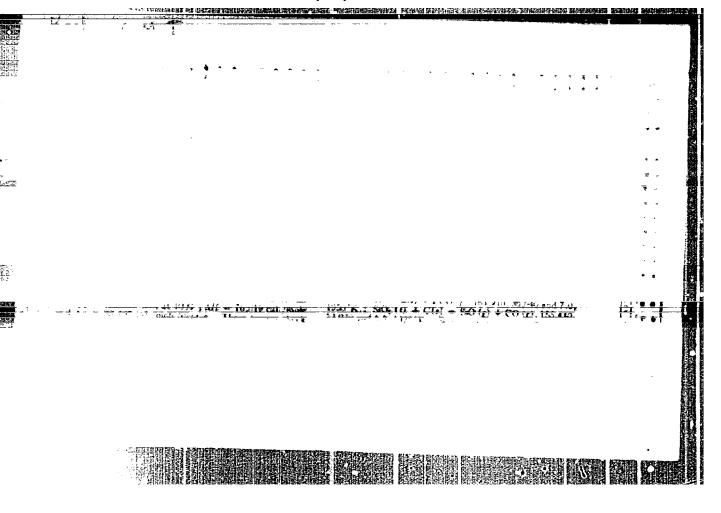
RABIMOVICH, M.I.; KUNDZICH, M.M., insh., retseasant; KOCHORV, M.C., insh., red.; ZHURAVLEVA, M.M., red.isd-va; TIRHAMOV, A.Ta., tekhn. red.

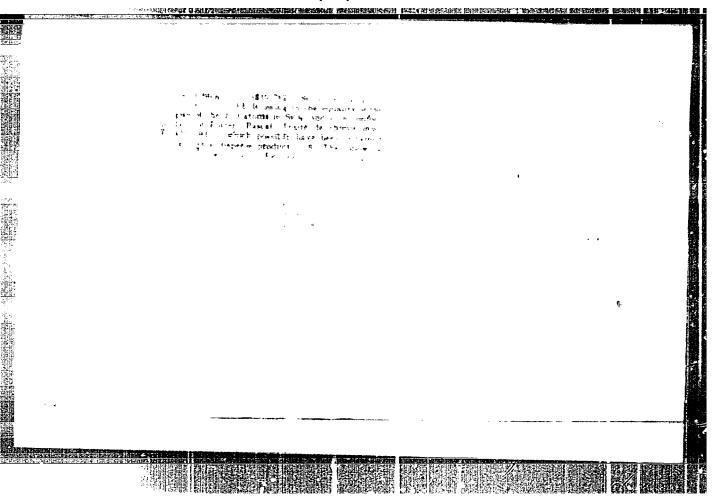
[Nobile pumping stations for irrigation]Peredvishnye nasosnye stantsii dlie orosheniia. Noskva, Mushgis, 1962. 115 p.

(Pumping stations) (Irrigation)

(Pumping stations)







KOCHNOV, H. 1.

M. I. Kochnov, Examination of abnormal sectors of the logarithmic curves of the dissociation pressure of cobalt arsenides. P. 1210

This work is devoted to the study of the dissociation pressure of cobalt arsenides. This investigation was preceded by the study of ignition temperatures of cobalt arsenides by heating them in a stream of air. This work is to augment the characteristics of arsenides by studying their behavior in a neutral atmosphere near their ignition temperature and on the given dissociation pressure to characterise the cobalt arsenides thermodynamically.

Chair of Metallurgy of Heavy Non-Ferrous Metals of the Ural Industrial Institute, March 22, 1948

SO: Journal of Applied Chemistry (USSR) 21, No. 12 (1948)

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520010-1"

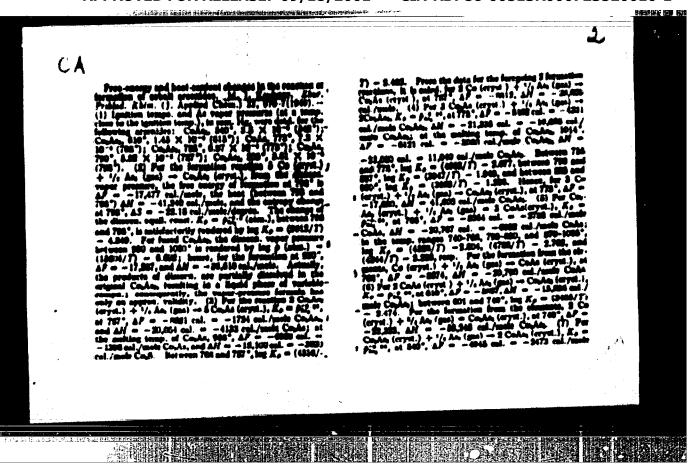
USER/Chemistry - Silicon Oxide Aug 48
Chemistry - Vapor Pressure

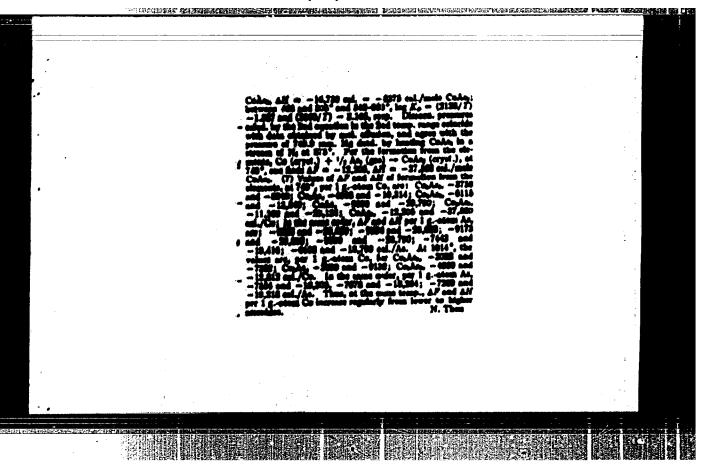
"Vapor Tension of Silicon Oxide," P. V. Cel'd,
M. I. Kohnev, Ural Ind Inst imeni S. M. Kirov, h pp

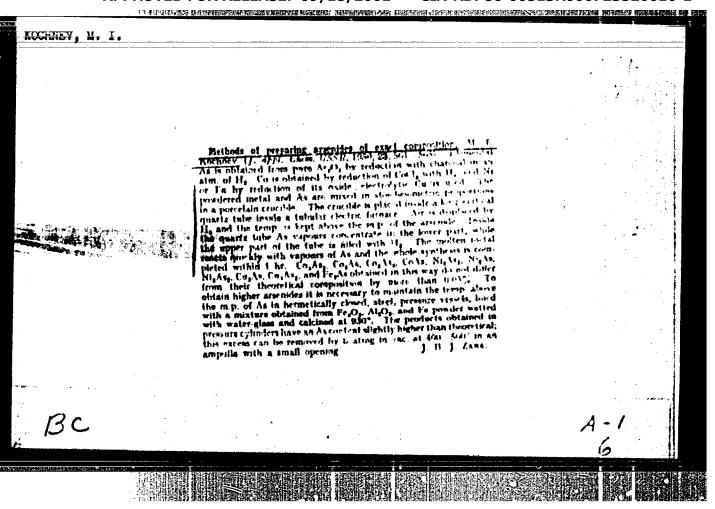
"Dok Ak Hank SSER" Vol IXI, No 4

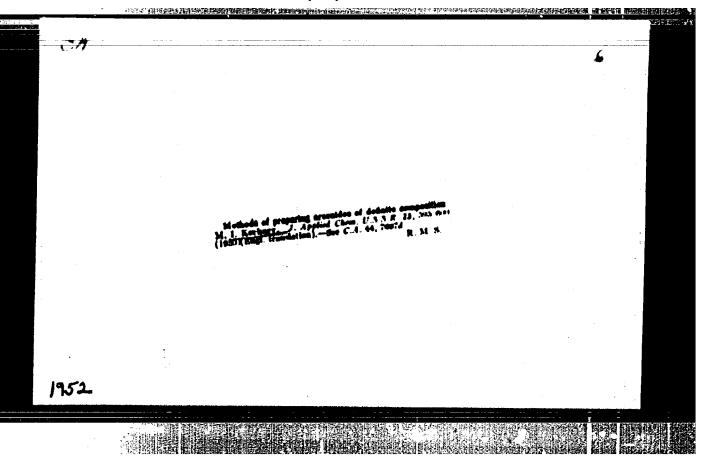
Studies vapor pressure of silicon dioxide between
900° and 1100° C. Tabulates results. Independence
of SiO vapor tension of its degree of volatilization
shows that solid state is a separated phase, and not
a solid solution. Submitted 15 May 48.

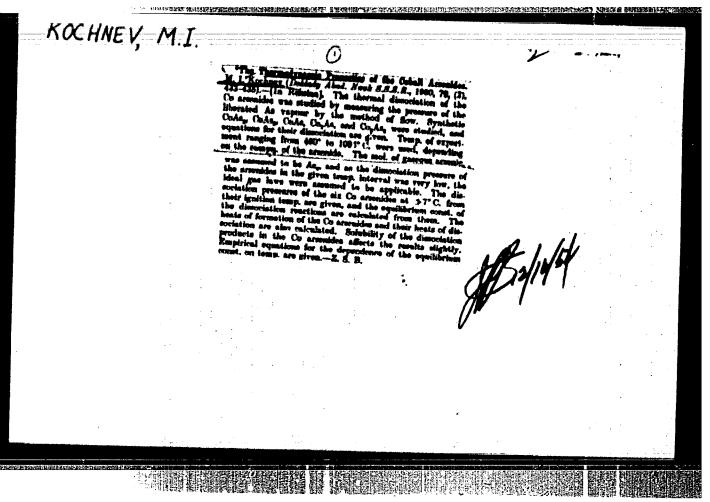
11/49715



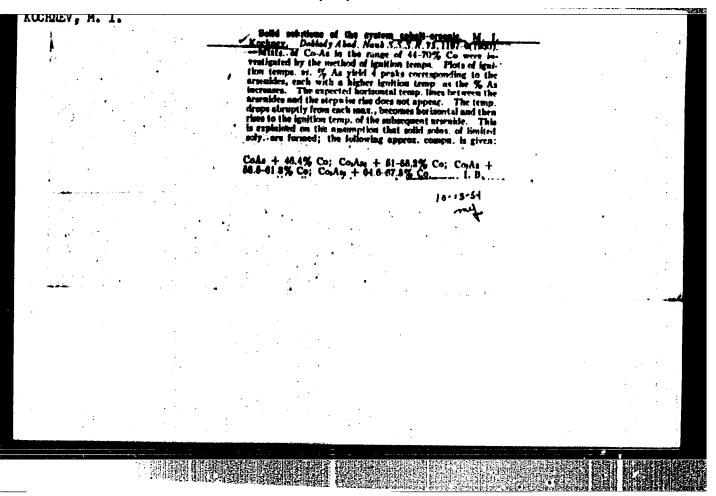


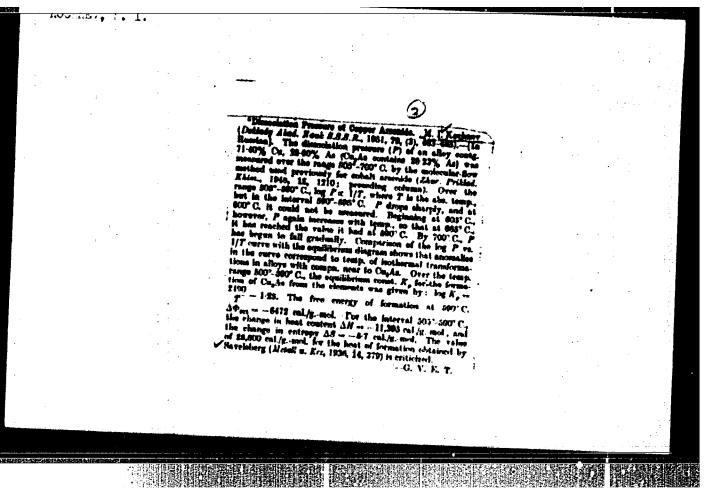






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KOCHNEV, K. I.

262723

USSE/Metallurgy - Nickel Ores, Smelting Aug 5

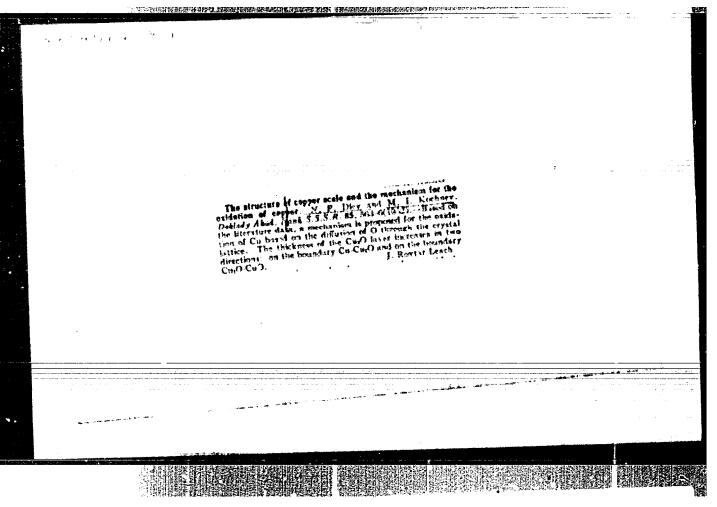
"Effect of the Oxides of Alkali Metals on the Viscosity of High-Magnesium Slags," N. P. Diyev, M. I. Kochnev, M. F. Kochin, Tu. A. Gyrdymov

Iz Ak Nauk SSSR, OTN, No 8, pp 1182-1188

Discusses exptl smelting of Ni ores for obtaining complete characteristic of compn and properties of slags. Establishes that slags with 10-12% FeO and 17-19% MgO are extremely difficult to selt and have high viscosity. Presence of alkali metal oxides in amount of 1.5-2.0% reduces high fusibility and viscosity of these slags, promoting their removal

262T23

from furnace. Such favorable effect of oxides takes place only when total content of silica and alumina does not surpass approx 52%. Presented by Acad I. P. Bardin 28 Oct 51.

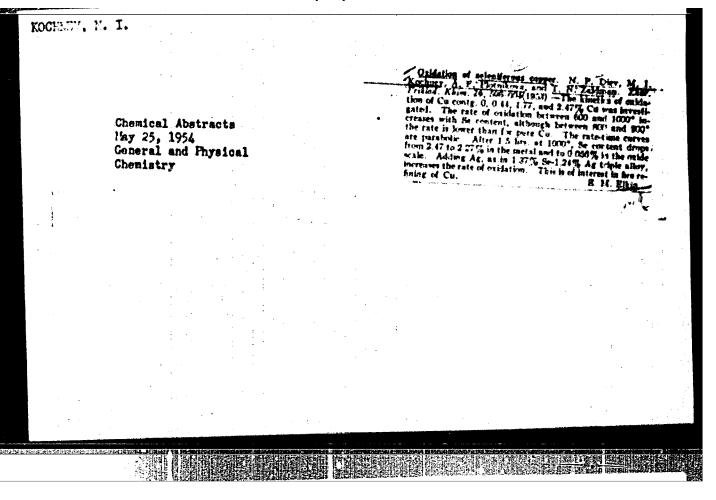


中心性的 化射线 电外形列流电路 Submitted 医人名约斯斯 多型 医神经神经

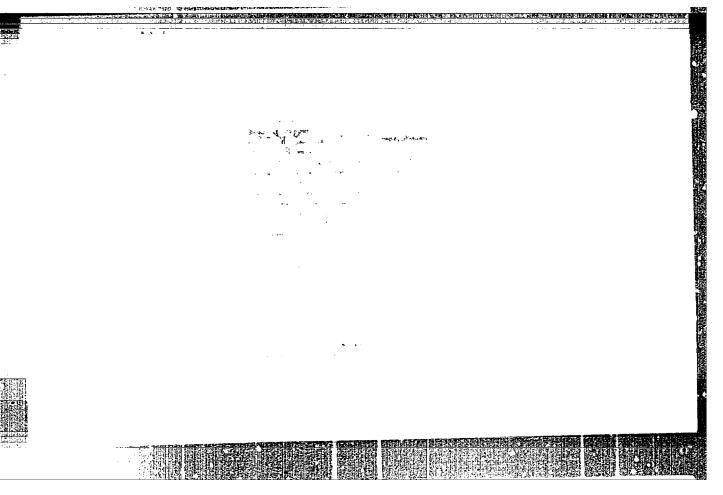
Characteristics of variation in the physico-chemical properties of copper selenide. Isv.AH SSSR Otd.tekh.nauk no.12:1813-1818 (MLRA 7:2) D '53. 1. Predstavleno akademikom I.P.Bardinym. (Copper compounds)

"APPROVED FOR RELEASE: 09/18/2001

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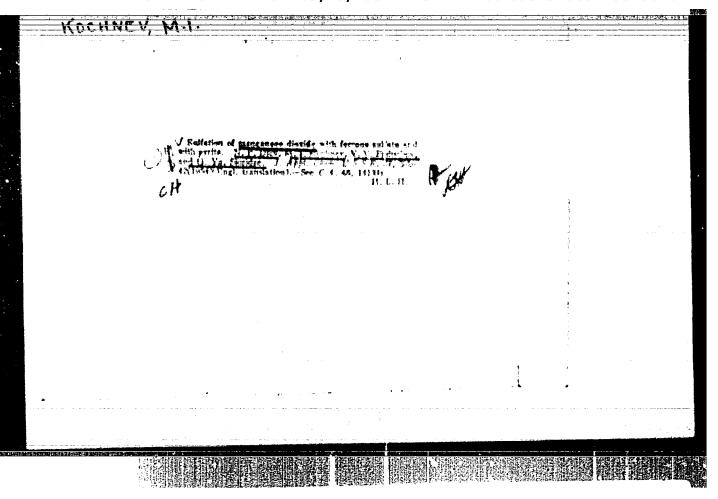


KICHNEY, M.I.

DIYEY, Mikolay Pavlovich; VERDEMICHEY, Sergey Aleksandrovich; PRE'KO, Aleksandr Stepanovich, KOCHGY, M.L., medaktor; LUCHEO, Tu.V., redaktor; KOVALMIKO, W.I., tekmicheskiy redaktor

[Smelting copper ores and concentrates in moverberatory furnaces]
Otrashatel'naia playka mednykh rud i konteentratov; uchebnoe posobie
dlia shkol i kursov masterov. Sverdlovsk, Gos. muchno-tekhn. isd-vo
dlia-ry pe chernoi i tsvetnoi metallurgii, 1954. 300 p. (MLRA 8:4)
(Copper-Metallurgy) (Smelting furnaces)

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520010-1"



KOCHETV. M. I.

AID - P-86

Subject

: USSR/Chemistry

Card

: 1/1

Authors

: Diyev, N. P., Kochnev, M. I., Paduchev, V. V., and Storidse, G. Ya.

Title

: Formation of manganese sulfate from manganese dioxide by ferrous

sulfate or pyrite

Periodical : Zhur. Prikl. Khim. 27, no. 4, 356-359, 1954

THE RESIDENCE OF THE PROPERTY OF THE PROPERTY

Abstract

Rossting of manganese dioxide with ferrous sulfate at 200-000 J converts 98-99% manganese into sulfate; with pyrite, 87.5-

89% Mn. Three references (U.S.S.R.): 1935-1944. Three graphs;

three tables.

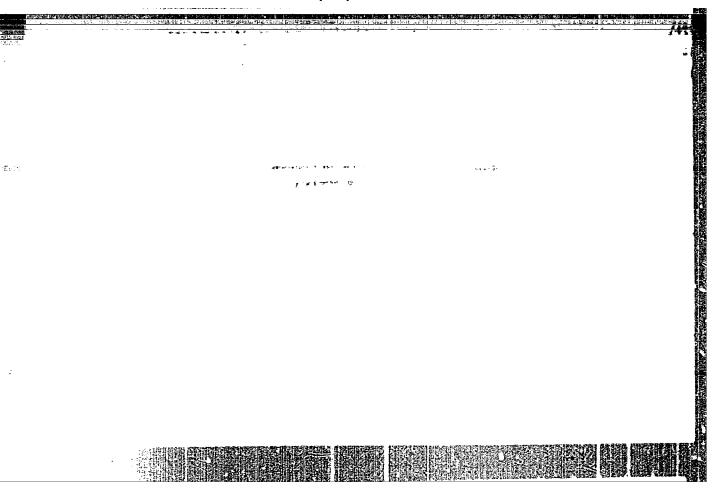
Institution : None

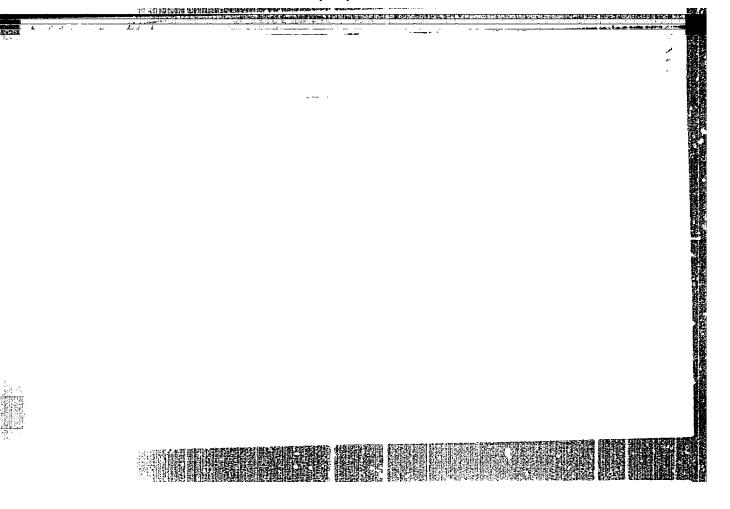
Submitted : February 16, 1953

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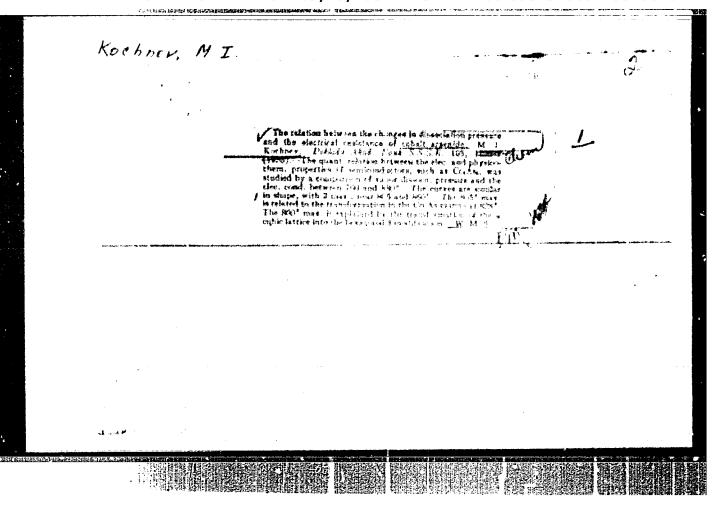






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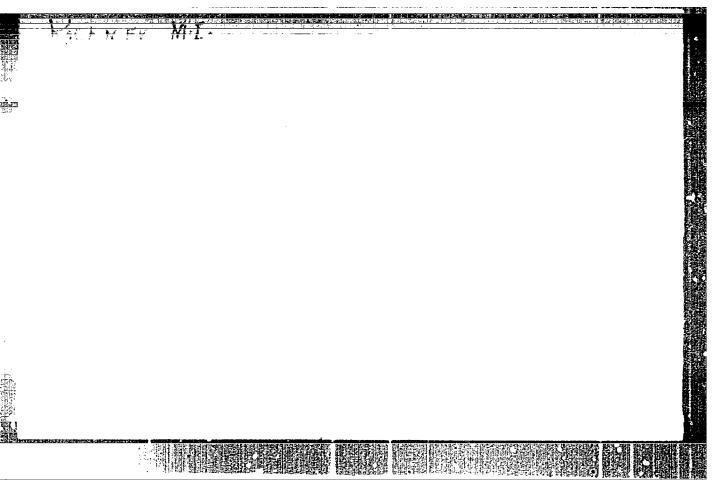


AGLITSKIY, Viktor Aleksandrovich; KOCHHY. M.I., redaktor; KEL'HIK, V.P., redaktor isdatel'stva; KOVALRIKO, H.I., tekhnicheskiy redaktor

[The manufacture of copper wire bars; theory and practice]
Proisvodstvo mednyth vaierbarsov; teorita i praktika. Sverdlovsk,
Oos. nauchno-tekha. isd-ve lit-ry po chernoi i tavetnoi metallurgii,
Sverdlovskoe otd-nie, 1956. 287 p.

(Wire) (Copper-Metallurgy)

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520010-1



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USSE/ Cosmochemistry. Geochemistry. Hydrochemistry

1111.1.

D.

Abs Jour : Referat Zhur - Khimiya, No 4, 1957, 11520

Author

: Zaydman T.W., Kochney M.I., Plekhanov A.F. : Department of Technical Sciences, Academy of Sciences USSR Irist Title : On Reactivity and Thermal Transformations of Sphalerite

Orig Pub : Izv. AN 888R, Otd. tekhn. n., 1956, No 6, 168-171

Abstract : Investigated was the dependence of heating rate of a specimen of sphalerite on the temperature at a constant flow of heat. Chemical composition of specimen (in \$): Zn 6\$.15, 8 32.25, Pb 0.42, Fe 0.78. Correlation between rate of heating c degree/minute and temperature is represented by a graph which is of the nature of sudden changes with a gradual subsidence on increase in temperature to 650°. The curve shows two shar-

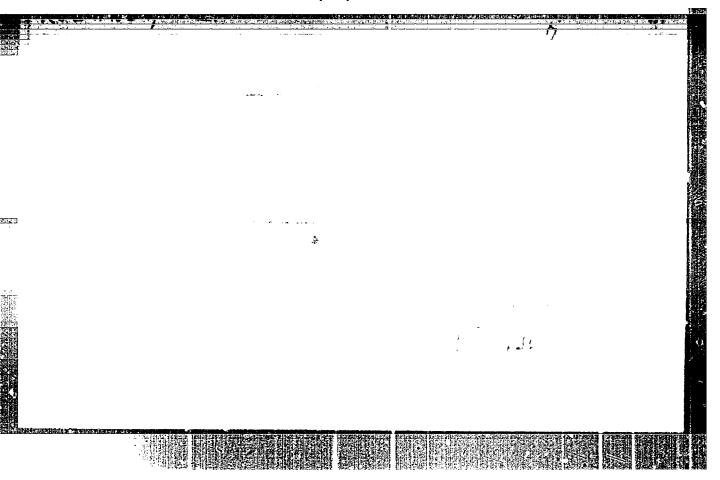
ply manifested maxima (at 650 and 950°) and two minima (at 850 and 1020°), after which the curve extends upward. Anomalous progression course of the graph is due to the occurence of a number of thermal transformations assodiated with changes in state of crystal lattice. A correlation has been ascertained between intervals of thermal transformations of ZnS and tempe-

rature of critical points of the forming elements.

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APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520010-1"

WOLKOVA, P.I.; DITHY, H.P.; MCKENY, M.I.,

Phase composition of copper-size matter. Thret.met. 29 ne.1;
47-50 Ja 156.
(Gepper-Metallurgy) (Size-Metallurgy)

(MRA 916)

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SOV/137-58-10-21303

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 10. p 123 (USSR)

AUTHORS: Zalazinskiy, G.G., Diyev, N.P., Kochnev, M. I.

TITLE: On the Kinetics and the Mechanism of Oxidation of a Coppernickel Alloy at Elevated Temperatures (O kinetike i mekhanizme okisleniya medno-nikelevogo splava pri vysokikh temperaturakh)

PERIODICAL: Tr. in-ta metallurgii. Ural'akiy fil. AN SSSR. 1957, Nr 1, pp 59-64

ABSTRACT: The kinetics of oxidation (O) of a Cu-Ni alloy (I) in the process of multiple heating and the diffusion of O₂ in I were investigated, and comparative data on the oxidation in air and in O₂ were determined. Attempts to establish selective diffusion of Cu and Ni in the process of 30 hours' O of I containing 4.1% Ni were unsuccessful. The rate of diffusion of O₂ in I in the process of its O at 1000°C in air is higher than the rate of the growth of the scale, as the result of which I becomes saturated with O₂. The rate of O of I quickly increases with the saturation of its entire mass with O₂. The rate of O of I in either air or O₂ in the 700 ~ 1000° temperature range increases ~ 2.2 times with a 100° increase in temperature. The rate of O of I in O₂ is on

SOV/137-58-10-21303

On the Kinetics and the Mechanism of Oxidation (cont.)

the average 1.56 times higher than in air. The rate of O of I in air at 700 - 800° is lower than the rate of O of electrolytic Cu, whereas at 900 - 1000° it is higher than that of pure Cu.

N. L.

1. Copper-nickel alloys--Oxidation 2. Copper-nickel alloys--Temperature factors 3. Copper--Diffusion 4. Nickel--Diffusion

Card 2/2

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520010-1" Translation from: Referativnyy zhurnal. Metallurgiya, 1958, Nr 12, p 53 (USSR)

AUTHORS: Volkova, P. I., Diyev, N. P., Kochnev, M.

TITLE: The Behavior of Zinc Compounds When Matte is Allowed to Stand (Povedeniye soyedineniy tsinka pri otstaivanii shteynov)

PERIODICAL: Tr. In-ta metallurgii. Ural'skiv fil. AN SSSR. 1957, Nr 1, pp. 87-92

ABSTRACT: A Kryptol furnace and alundum crucibles are used under laboratory conditions to run experiments in which Cu mattes containing -25% Cu and various amounts of Zn are allowed to stand. It is established that up to -8% of the ZnS in a melt of Cu matte at 11400C is in solution. If the ZnS content is higher, the excess is in the form of a ZnS-enriched sphalerite solid solution, which rises to the surface when the matte bath is allowed to stand and forms a thick viscous ZnOFe₂O₃ + FeS=ZnS+Fe₃O₄ reaction occurring in the melts causes a long period. The magnetite is concentrated by segregation in the lower portion of the matte ingot, and also in its upper portion, which

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520010-1"

The Behavior of Zinc Compounds When Matte is Allowed to Stand (cont.)

is of elevated viscosity when allowed to stand. Small amounts of SiO2 and Al2O3 found in matte melts do not precipitate.

Ye. Z.

SOV/137-58-12-24300

Translation from: Referativnyy zhurnal. Metallurgiya, 1958, Nr 12, p 53 (USSR)

AUTHORS: Volkova, P. I., Diyev, N. P., Kochnev, M. I.

TITLE: Reaction Between Zinc Matte and Metallic !ron !Vraimodeystviye

mezhdu tsinkovistym shteynom i metallicheskim zhelezom)

PERIODICAL: Tr. In-ta metallurgii. Ural skiy fil. AN SSSR, 1957, Nr 1, pp

93-98

ABSTRACT: The reaction between ZnS and metallic Fe in the 600-1300°C temperature range is studied. The thermodynamic calculation of the isobar

potential is studied. It shows that the probability that the reaction would occur rises with temperature. A study is made of the rate of reaction between Zn matte and metallic Fe. It is established that:

1) The quantity of Zn removed in the process at a given Fe content rises with temperature; 2) the reaction between the solid phases occurs in the first 20 min, after which it ceases; 3) when the Fe content in the specimen is low and the temperature is 1000°, the reaction between Zn matte and Fe hardly occurs at all; 4) the

Card 1/2 marked change in the isobar potential of the reaction between ZnS and metallic Fe at 900° corresponds to the maximum Zn removal

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SOV/137-58-12-24300

Reaction Between Zinc Matte and Metallic Iron established by kinetic investigations.

L.S.

Card 2/2

SOV/137-58-7-14554

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 7, p 87 (USSR)

AUTHORS: Skornyakov, G.P., Motova, Z.A., Kochney, M.L.

TITLE: Luminosity of Converter Flame During the Fining of Blister

Copper (O svechenii plameni konvertera v period dovodki

chernovoy medi)

PERIODICAL: Byul. tavetn. metallurgii. 1957, Nr 24, pp 20-22

by the onset of Cu oxidation.

ABSTRACT: A photometric study was conducted of the converter flame (by spectroscope connected to a film camera), and optical monitoring by photoelectric pyrometer with recording potent-iometer was performed. In both cases, intensity of emission was found to increase during the fining period, this being connected with an increase in the Cu contents of the melt. Maximum emission of light was attained during the final 5 to 8 min. The subsequent sharp drop is apparently to be explained

1. Flames--Spectographic analysis 2. Photometry--Appli-

cations 3. Photoelectric pyrometers--Applications 4. Copper

Card 1/1 -- Properties

KOCHNEY, M.J.

24-58-3-9/38

AUTHORS: Kochnev, M.I., Plotnikova, A.F. and Starkov, L.N. (Sverdlovsk).

TITLE: Temperature Features of the Process of Oxidation of Copper Sulphide (Temperaturnyye osobennosti protsessa okisleniya sul'fida medi)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Otdeleniye Tekhnicheskikh Nauk, 1958, Nr 3, pp 82-88 (USSR)

ABSTRACT: Modern conceptions on the changes in the electron structure of atoms and their influence on the character of the chemical bond forces, gained from the study of semi-conductors, justify a more thorough analysis of various phenomena involved in metallurgical processes. In earlier work in this field, relating to compounds of heavy non-ferrous metals, the team of the authors of this paper established the existence of a temperature correspondence in the changes of the properties of these compounds and of their components. The aim of the work described in this paper was to study the interrelation between the temperature changes and the properties of copper and sulphur and the properties of the simple compound Cu₂S formed from these. Cu₂S was chosen for investigation due to the fact that it is one of the basic components of the raw materials for which new processes of roasting and Smelting are being developed. Two specimens were investigat-

24-58-3-9/38

Temperature Features of the Process of Oxidation of Copper Sulphide.

ed which were prepared synthetically by smelting, the respective compositions being the following: 78.9% Cu, 21.1% S and 79.1% Cu, 20.9% S (the theoretical composition being 79.8% Cu, 20.2% S). In both cases the composition was in the range of solid solutions of sulphur in Cu₂S. The differ-

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ences in the composition of the two specimens proved to be of little importance. The experiments were carried out mainly with sulphide grains of the sizes 0.50 to 0.63 mm. Oxidation of the sulphide was carried cut in a vacuum setup, a sketch of which is shown in Fig.1, p.83, using the method of circulating air in a closed system, drawing it through a layer of the charge which is heated to a certain temperature; the gases obtained after drawing off the air through the charge were caught by a device in which cooling by means of liquid nitrogen was applied for the purpose of freezing out sulphurous acid anhydride and sulphuric anhydride. According to Averbukh, B.D. (Ref.7) the quantity of forming sulphuric anhydride under these conditions is very low and, therefore, was not determined separately. The investigations were carried out with a constant initial air pressure in the system Card 2/4

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24-53-3-9/38

Temperature Features of the Process of Oxidation of Copper Sulphide.

of 408 mm and a constant temperature of the charge, which were established during each measurement of caygen consumption after three minutes. The total duration of the experiment was 21 or 30 mins. The graph, Fig.2, gives the change in the speed of oxidation of Cu₂S during continuous heating. The graph, Fig.3, gives the temperature dependence of the coefficient of electrical resistance of the copper. The graph, Fig.4, gives the temperature dependence of the oxidation speed of copper sulphide along a fresh surface. The graph, Fig.5, gives the temperature dependence of the quantity of copper which is present in the form of exides and sulphate in the residue on the degree of oxidation of Cu₂S. In Fig.6 the consumption of exygen and the yield of sulphurous acid anhydride as a function of the temperature are graphed. It was established that the speed of exidation of

ous acid anhydride as a function of the temperature are graphed. It was established that the speed of exidation of Cu₂S does not change continuously with temperature but is complicated by a number of anomalous deviations within

narrow temperature ranges. The temperatures of the narrow deviations in the kinetics of oxidation of copper sulphide are critical temperatures for pure copper and pure sulphur, the manifestation of which is considered as being the result

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24-58-3-9/38

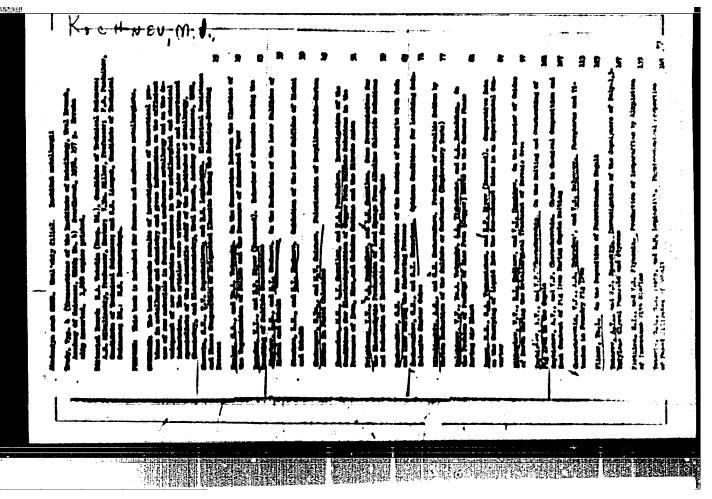
Temperature Features of the Process of Oxidation of Copper Sulphide.

of changes in the electron structures of the atoms with increasing temperature. The character of the changes in the speeds of oxidation of the copper sulphide at critical temperatures is elucidated and the limits of anomalous temperature ranges were determined; in most cases the sharp fluctuations in the oxidation speed reach 20 to 30% and take place in the temperature range 5 to 15°C. On the basis of study of the oxidation isotherms, the degree of utilisation of the oxygen and the yield of sulphurous acid anhydride and of the influence of the oxidation duration, the conclusion is arrived at that the determining factor in the process of oxidation of Cu₂S at temperatures up to 450°C is the formation of sulphate. There are 6 figures and 12 references, 11 of which are Soviet, 1 English.

ASSOCIATION: Institut metallurgii Ural'skogo filiala, AN SSSR (Institute of Metallurgy, Ural Branch Ac.Sc., USSR)

SUBMITTED: January 3, 1957.

Card 4/4 1. Copper sulfide -- Oxidation 2. Temperature -- Effects



807/24-58-4-22/39

Kochney, M.I. and Plotnikova, A.F. (Sverdlovsk) AUTHORS:

Kinetics of Reducing Magnetite at Temperatures at Which TITLE: Transformation of Iron Takes Place (Kinetika vosstanov-

leniya magnitnogo zheleznyaka pri temperaturakh

prevrashcheniy zheleza)

Izvestiya Akademii Hauk SSSR, Otdeleniye Tekhnicheskikh PERIODICAL:

Nauk, 1958, Nr 4, pp 118 - 121 (USSR)

In earlier work one of the authors of the paper found that ABSTRACT: there is a direct relation and a temperature correspondence

between the changes taking place in various metal compounds and the changes in the properties of the individual elements forming these compounds. In this paper, the authors aimed at verifying this conclusion for iron oxides and thus to try and explain anomalous phenomena taking place in reduction processes. To bring the theoretical investigations nearer to industrially used materials, the

authors used in the experiments magnetite and not pure oxides. The composition of the ore was as follows: 51.1% Fe, 22.9% FeO, 0.18% MnO, 12.0% MgO, 0.55% CaO, 1.74% Al₂O₃, 9.4% BiO₂, 2.6% B, 0.05% Cu. The kinetics of

Cardl/7

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520010-1" SOV/24-58-4-22/39 Kinetics of Reducing Magnetite at Temperatures at Which Transformation of Iron Takes Place

reduction wereinvestigated on a circular vacuum test rig (described in an earlier paper) (Ref 20) inside a hydrogen atmosphere; the initial pressure was 408 mm, hydrogen was sucked through a layer 25 mm high, weighing 7 g, with particle dimensions between 0.4 and 0.6 mm. The temperature in the layer was measured with an accuracy of ± 1°C; the circulation speed was 600 ml./min with a volume of the system of 800 ml. The gaseous reaction products were frozen out in a trap which was cooled by liquid nitrogen. The ore was heated to the desired temperature in vacuum (10⁻² to 10⁻³ mm Hg). Following that, a quantity of hydrogen was introduced which was equal in every case, maintaining the pressure constant. The speed of reduction was judged from the consumption of hydrogen in the closed system which was measured every minute. Every three minutes the system was joined to a vacuum and, after that, the temperature was readjusted and the gaseous phase renewed. It could, therefore, be assumed that a number of successive measurements, carried out at 3 min intervals, provided the isotherm of the reduction of the ore. At

Card2/7

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520010-1"

SOV/24-58-4-22/39

Kinetics of Reducing Magnetite at Temperatures at Which Transformation of Iron Takes Place

> each temperature the experiments were carried out with a fresh ore specimen. Since the aim of the work was to elucidate the existence of a relation between the changes in the properties of the iron, at temperatures at which it is known that phase transformations take place, and the kinetics of reduction of iron oxides under equal conditions, the investigations were carried out in the temperature range 700 to 910 °C. In this temperature range magnetic as well as polymorphous transformations take place in the iron at 768 and 906-910 °C, respectively. The speeds of reduction of magnetite, expressed in terms of hydrogen consumption during the first 3 min as a function of the temperature, are graphed in Figure 1. It can be seen that the graph contains several anomalous sections. The obtained results justify revision of certain views expressed

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SOV/24-58-4-22/39 Kinetics of Reducing Magnetite at Temperatures at Which Transformation of Iron Takes Place

on the kinetics of reduction of iron oxides. In the first instance, it is quite evident that sintering phenomena, changes in the porosity and recrystallisation of the sudied substances and in the reaction products, changes of speed of diffusion and the speed of chemical reactions do occur in the course of variation of the temperature during reduction of the ores and of iron oxides. The most plausible explanation of the anomalous phenomena in the processes of reduction is based on the changes of the state of the iron atoms as a function of the temperature, particularly as regards phase transformations. The obtained results (Figure 1) indicate that the jumps in the speed of reduction at 752-756 °C correspond to the magnetic transformation of the iron and not to the Curie point of the magnetite. Thus, the change in the character of the chemical process at the

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807/24-58-4-22/39

Kinetics of Reducing Magnetite at Temperatures at Which Transformation of Iron Takes Place

temperature of magnetic transformation of the iron confirms the conclusion that the anomalous phenomena in the chemical and physical processes at various temperatures are based on the changes in the state of the atoms and not on changes of the crystal lattice. It can be seen from the graph, Figure 2 (temperature coefficient of the electric resistance of iron) that the thermal coefficient of the electric resistance changes appreciably in the temperature range 400 to 450 °C and also at 550 and 650 °C.

Card 5/7

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SOV/24-58-4-22/39

Kinetics of Reducing Magnetite at Temperatures at Which Transformation of Iron Takes Place

> The following conclusions are arrived at: 1) The speed of reduction of magnetite with hydrogen decreases in jumps and then again increases within narrow temperature range approaching the following temperatures: magnetic transformation of the iron (752 C), Tep-> Tey transformation (906 C) and at about 820 C, at which the properties of the iron change considerably. 2) Using the example of the jump-like change in the speed of reduction at temperatures of the magnetic transformation of iron it is shown that the observed anomalies in the kinetics of the process are based on the changes of the electron structure of the iron atoms. 3) The anomalies in the kinetics of reduction of ore are eplained more satisfactorily than hitherto from the point of view of transformations taking place in the iron. 4) The results of the here described work can be applied for selecting optimum temperatures for the preparation and processing of ores in the neighbourhood of critical points.

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SOY/24-58-4-22/39

Kinetics of Reducing Magnetite at Temperatures at Which Transformation of Iron Takes Place

There are 2 figures and 27 references, 2 of which are Swedish, 1 German, 1 English and 23 Soviet.

Institut metallurgii Ural'skogo filiala AN SSSR ASSOCIATION:

(Institute of Metallurgy, Ural Branch of the Ac.Sc.USSR)

March 11, 1957 SUBMITTED:

Card 7/7

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520010-1"

AUTHOR: Kochney, M. I. (Sverdlovsk)

807/24-58-11-32/42

TITLE:

On the Nature of Isothermal Processes in the Blast Furnace (O prirode izotermicheskikh protsessov v

domennoy pechi)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Otdeleniye Tekhnicheskikh Nauk, 1958, Nr 11, pp 121-123 (USSR)

ABSTRACT: In investigating the heat exchange processes in blast furnaces, the charge of which contains ores and fluxes, it was established that the curve of temperature distribution along the height of the furnace is S-shaped (Refs 1-8). It is characteristic that in the central part the temperature in the vertical direction changes very little and is maintained spontaneously in the neighbourhood of 800 to 900°C; the difference between the temperature of the gases and of the charge assumes in this region the minimum value of 5 to 10°C. The presence of this quasi isothermal zone, referred to as the no-load reserve zone or the zone of moderate temperatures, was considered as being a stable, typical relation. However, recent experiments by N. N. Babarykin and F. A. Yushin (Ref 9) have shown that if fluxed agglomerate is smelted

Cardl/3 without charging ore and limestone, the previously

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723520010-1"

SOV/24-58-11-32/42 On the Nature of Isothermal Processes in the Blast Furnace

mentioned temperature distribution is not maintained and the temperature curves show two to three isothermal breaks. The cause of these has not been clarified. On the basis of data obtained from practical experience and analysis of the thermal balance of blast furnaces, it can be concluded that in the reserve zone of the blast furnace a considerable development of reduction processes takes place and also an intensification of the processes of heat exchange which is brought about by the isothermal processes. From the correspondence between the temperatures of the change in the properties of iron and its oxides and the temperatures at which the break in the temperature rise occurs in blast furnaces it can be concluded that the appearance of isothermal zones is due to transient states of iron and its oxides, i.e. it is due to the nature of the main reacting substances.

Card2/3

SOV/24-58-11-32/42 On the Nature of Isothermal Processes in the Blast Furnace There are 23 references, all of which are Soviet.

ASSOCIATION: Institut metallurgii Ural'skogo filiala AN SSSR (Institute of Metallurgy, Ural Branch of the Ac.Sc. USSR)

SUBMITTED: April 17, 1957

Card 3/3

Phase transformations of solid state sino. Trudy Inst.met.UPAB
888R no.3:37-42 159. (MIRA 13:4)
(Zino) (Phase rule and equilibrius)